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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,011	07/24/2001	Gerald D. Zuraski JR.	5500-67400	4622

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EXAMINER
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MEONSKE, TONIA L

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/912,011

Applicant(s)

ZURASKI ET AL.

Examiner

Tonia L. Meonske

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-10, 13-18, and 21-23 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 11, 12, 19, and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5-10, 13-18, and 21-23 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yung, European Patent Application EP 0 798 632 A2 (herein referred to as Yung).

3. Referring to claim 17, Yung has taught a computer system comprising:

- a. an interconnect (Figure 1, column 3, lines 25-54);
- b. a memory coupled to said interconnect (Figure 1, element 20);
- c. a second level cache configured to store branch prediction information (Figures 3 and 4, column 4, line 30-column 5, line 18);
- d. a processor including a first level cache (Figure 2, column 4, lines 12-29),

wherein said processor is configured to:

- i. detect said first level cache does not contain a first branch prediction information corresponding to a first fetch address (column 1, lines 11-14),
- ii. determine whether said second level cache contains a second branch prediction information corresponding to said first fetch address, said second branch prediction information comprising a subset of said first branch prediction information (column 1, lines 14-17, column 4, lines 33-33 and 41-52, Figure 3);

iii. rebuild said first branch prediction information in response to determining said second level cache contains said second branch prediction information (column 4, line 41-column 5, line 6), wherein in order to rebuild said first branch prediction information, said processor is configured to:

- (1) receive said second branch prediction information (Figure 3, The L2 cache receives the second branch prediction information.);
- (2) receive a group of instructions corresponding to the fetch address (column 3, lines 40-45);
- (3) utilize the second branch prediction information to identify one or more predicted taken branches within the group of instructions (column 4, lines 3-30);
- (4) generate third branch prediction information by decoding each of the identified one or more predicted taken branches to determine a type of each of the one or more predicted taken branches (column 4, line 3-column 5, line 7);
- (5) combine said second branch prediction information with said third branch prediction information (column 4, line 3-column 5, line 7);
- (6) store said combined second and third branch prediction information as said first branch prediction in a first entry of said first level cache, wherein said first entry corresponds to said first address (column 4, line 3-column 5, line 7).

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4. Referring to claim 2, Yung has taught the method of claim 1, as described above, and further comprising:
  - a. determining if said first entry of said first level cache is available (abstract, Figure 3, column 2, lines 25-58),
  - b. evicting contents of said first entry in response to detecting said first entry is not available (abstract, Figure 3, column 2, lines 25-58); and
  - c. storing a subset of said contents in said second level cache responsive to said eviction (abstract, Figure 3, column 2, lines 25-58).
5. Referring to claim 5, Yung has taught the method of claim 4, as described above, and wherein said branch instruction is fetched from said second level cache (column 1, lines 10-17).
6. Referring to claim 6, Yung has taught the method of claim 1, as described above, and wherein said subset comprises a dynamic bit (Figure 3).
7. Referring to claim 7, Yung has taught the method of claim 6, as described above, and wherein said subset further comprises a branch marker bit (Figure 3).
8. Referring to claim 8, Yung has taught the method of claim 7, as described above, and wherein said branch prediction further comprises an end adjustment bit (Figure 3).
9. Referring to claim 21, Yung has taught the method of claim 1, as described above, and wherein said second level cache and said first level cache do not store duplicate information (Figure 2 and Figure 3).

***Response to Arguments***

10. Applicant's arguments with respect to claims 1, 2, 5-10, 13-18, and 21-23 have been considered but are moot in view of the new ground(s) of rejection.

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***Allowable Subject Matter***

11. Claims 3, 4, 11, 12, 19, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tonia L. Meonske whose telephone number is (571) 272-4170.

The examiner can normally be reached on Monday-Friday, 8-4:30.

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie P. Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tlm



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